



STRATHMORE UNIVERSITY
INSTITUTE OF MATHEMATICAL SCIENCES
END OF SEMESTER EXAMS

COURSE CODE: STA 8104

COURSE NAME: SURVEY DESIGN AND ANALYSIS

DATE: 19th DECEMBER, 2018. TIME: 2 HOURS 30 MINUTES

INSTRUCTIONS.

Answer question ONE and any other THREE questions.

Question 1 (Compulsory).

a) Why should researchers care about non responses during surveys?

[4 Marks]

b) Explain any two factors that you would consider when evaluating a sample? **[4 Marks]**

c) Give the distinction between the following terms used in survey design?

i) sampling error and sample frame

[4 Marks]

ii) Unit and item nonresponse? **[4 Marks]**

d) Explain how non contact between respondent and interviewer can be a source of error in survey analysis? **[4 Marks]**

e) Explain how Form and Content of a question are important in survey data collection **[5 Marks]**

Question 2.

a) What is a special purpose survey? **[3 Marks]**

b) Explain three components that constitute a good survey? **[6 Marks]**

c) Outline two types of inferences that are required in the process of producing statistics about a target population. **[4 Marks]**

d) Suppose you are in charge of a team planning to sample pupils from Nairobi county. Assume there are 20000 students in Nairobi county and these students go to 40 schools. You are required to select a sample of 2000 which is $1/10$ of the pupil population. Explain any two ways in which you would select this sample to maintain the probability of selection for each pupil sampled? **[2 marks]**

Question 3

a) The response rate is a basic parameter for evaluating a data collection effort. With regard to personal interview, explain how response rate is calculated? **[4 Marks]**

b) What biases are associated with non response? **[7 Marks]**

c) Propose two ways of reducing non response in surveys? **[4 Marks]**

Question 4

- a) Explain six critical considerations to make when selecting a data collection mode? **[7 Marks]**
- b) What are the potential advantages and disadvantages of internet based surveys? **[4 Marks]**
- c) Consider a one-stage sample in which clusters (schools) are selected by simple random sampling from **A** clusters (schools) in the population (all the schools in a county), and then all **B** elements (pupils) are taken in each selected cluster (school) (assume each cluster (school) is the same size). How does the variance of the sample mean vary with
- i) an increase in cluster means? **[2 Marks]**
- ii) an increase in the number of clusters? **[2 Marks]**

Question 5

- a) Explain the steps for designing and evaluating good survey instruments? **[6 Marks]**
- b) What are the three essential components of developing a survey instrument? **[3 Marks]**
- c) What are weights and how would you use weights in survey data analysis? **[6 Marks]**